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THE PSYCHOLOGY OF READING.

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THE WORK OF CERTAIN PSYCHOLOGISTS WHICH MAY HAVE BEARING UPON THE FIELD OF READING, PARTICULARLY IN COGNITION AND DEVELOPMENT, IS SURVEYED AND POSSIBLE APPLICATIONS OF PSYCHOLOGY TO READING ARE SUGGESTED. A WELL FORMULATED PSYCHOLOGY OF READING AND AN ADEQUATE THEORY OF READING HAVE NOT BEEN DEVELOPED. INSTEAD, READING SPECIALISTS HAVE TENDED TO SELECT VARIOUS PSYCHOLOGICAL POSITIONS TO SUPPORT CERTAIN OF THEIR OWN PRACTICES AND BELIEFS. PSYCHOLOGY MAY PROVIDE THE IMPETUS FOR DEVELOPING A THEORY OF READING WHICH MAY IN TURN ALLOW FOR MORE PRECISE RESEARCH IN THE FIELD. THIS PAPER WAS DELIVERED AT THE INTERNATIONAL READING ASSOCIATION CONVENTION (SEATTLE, MAY 1967). (RH)

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The Psychology of Reading

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Reading is a complex act performed by humans. Within the traditional meaning of the word, humans seem to be the only fauna which read. Although it is possible, perhaps, to argue that other types of animals read signs while seeking food or searching for mates, most of us likely will stipulate that reading is something that only humans do. Psychology is commonly regarded as the study of behavior. And because reading is one type of behavior, and an extremely important one to modern man, it might be assumed that psychologists have devoted considerable time and effort to studying it systematically. Unfortunately such is not the case. While many psychologists have on occassion studied some aspect of reading which momentarily interested them, few if any have devoted their entire professional careers to the study of the reading process. There are perhaps a number of reasons

for a lack of interest manifested by psychologists in reading. One reason may be the ascendency which behaviorism has held in American psychology during the present century, and the reluctance of the behaviorial psychologist to deal with covert behavior. Another reason undoubtedly is the obvious difficulties encountered in attempting to explicate and to study under controlled conditions many of the more significant aspects of reading behavior. Regardless of the reasons, however, there has not emerged and does not exist at present a systematic, well-formulated psychology of reading.

Yet many aspects of reading as it is taught and discussed today have been influenced by psychology. The familiar concepts of readiness, developmental reading, vocabulary control, drill and repetition, emphasis on meaning and interpretation, evaluating pupil progress, to mention but a few, have been influenced by psychological findings. Unfortunately the application of psychological findings have been piecemeal and sometimes even seem to serve merely as "garnishes" rather than to function as basic or fundamental principles underlying reading pedogogy. At present only one current text uses the word psychology in its title. This text entitled Psychology in Teaching Reading has three major goals according to the authors. First, it seeks to select data that are most relevant to the teacher's understanding of the reading process, secondly, it seeks to interpret these data in terms of the problems that the teacher will encounter, and finally seeks to apply the interpretations to the specific classroom problems that teachers meet (20). Although these objectives

are laudatory, it is questionable whether a psychology of reading is sufficiently structured to be of much value to the classroom reading teacher. The text rather seems to select a number of different aspects of educational psychology which appear to bear upon reading behavior and instruction. As such it falls short of presenting a systematic psycholology of reading.

There is, however, no systematic psychology of reading, nor is there an adequate theory of reading, a situation which complicates the task of this author. In attempting to deal effectively with this assignment, the writer deliberately has not attempted to report research bearing upon such familiar reading topics as readiness, perception and sensation, intellectual abilities, etc. Nor has any attempt been made to discuss in detail the research of persons having special interest in reading. Rather the strategy has been to discuss the work of certain psychologists that may have bearing upon the field of reading and to suggest possible areas where psychology can make significant contributions to reading.

Basically one major contribution which psychology can make to reading is to provide the impetus needed to develop a more adequate theory of reading. The term reading has been applied to such a wide range of behaviors that it has ceased to have a single identifiable meaning. If a science of reading behavior is to be developed it must draw heavily on what has been learned regarding the behavior of humans in a related field such as psychology. Although at present many psychological theories i.e., personality, learning, psychometrics, growth and development have been developed largely in special and limited contexts, there is no reason to suspect that the successful theory building found in social services cannot also be achieved in reading. Much of science has had its great impetus from the

discovery of principles that apply to merely a limited range of events. Thus it might be expected that a psychology of reading may evolve not from a comprehensive treatment, but rather from the discovery of principles or the development of theories which apply to limited segments of reading behaviors. In fact one difficulty the reading specialist faces is the limited degree to which many current psychological theories appear to be related to any aspect of classroom behavior. However, it is important that the present body of knowledge in the field of reading become so organized that generalizations and laws be applied to a wider range of problems and be testable under a number of conditions.

A major difficulty in achieving this end stems from the very comlexity of the human organism. Modern psychologists recognize that the organism functions in a holistic fashion, and that in any given situation behavior is a function of both the attributes of the individual and the situation in which the individual operates at that moment. Both Raygor (18) and Weaver (23) have suggested that the task is difficult because much reading behavior is covert, and the researcher must infer what goes on within the organism by studying how an individual reacts to various stimuli. Chomsky (5) in an excellent review of Skinner's Verbal Behavior states:

> "that insights that have been achieved in the laboratories of the reinforcement theorist, though quite genuine, can be applied to complex human behavior only in the most gross and superficial way, and that speculative attempts to discuss linguistic behavior in these terms alone omit from consideration factors of fundamental importance that are, no doubt, amenable to scienti-

fic study although their specific character cannot at present be precisely formulated."

It seems likely, however, that because of its adherance to the methods of science, psychology offers the promise of providing the means for explicating the current confusions concerning reading. To date, though, psychology offers the promise rather than the fruits of the scientific method. The writer believes however, that the major contributions of psychology will result from the theoretical considerations and carefully controlled experimentations of psychologists which may serve as models for reading research.

Despite the present lack of an adequate psychology of reading the work of certain scientists seems to bear on the interests of reading specialists or those concerned with reading behavior. Probably one of the most significant areas of congruence is the work of linguists, psycholinguists, information-theorists and psychologists concerned with language. Carroll (4), for example, notes three points at which linguists and psychologists have common interests. These are the possibility of universals in grammar and in language structure, the possibility of significant differences between languages in the kinds of relationship they exhibit between their expression and content systems, and the possible implications such differences may have for the cognitive behavior of the speakers of those languages, and the possibility of making a psychological interpretation of grammatical structure. Carroll also suggests that language may be viewed as a communication system. As such language has two major aspects: one, a physical and biological system in which communication takes place, and two, a sign system in which messages are formulated. Weaver, who has attempted to apply the rubric of information theory to language and reading points out the short-

comings of communication theory, but believes that it probably fits as well or better than S-R psychology. He argues that in communication theory neural action (covert though it may be) is considered whereas behaviorism excludes such physiological considerations from its theoretical structures. Today, however, there are a group of neo-behaviorists who attempt to deal with mediating processes.

Most reading specialists would agree that the reading process involves some sort of interaction between writer and reader and that some sort of language system is employed. A genuine problem that must be faced in finding similarities between the interests of language specialists and reading specialists lies in the tendency of linguists to talk mainly about oral language. Auding and reading obviously do involve the two aspects of communication which Carroll stresses, yet there also are certain significant differences between the two modes of behavior. Buswell (2) notes that the major difference in reading and speech is the difference in the sense avenues through which stimuli are received. According to Buswell the essential difference between knowing how to read and how to understand oral speech is the substitution of visual perception of visual symbols for auditory impressions of the same symbols when spoken. The thoughts expressed are the same, the vocabulary is the same, and the word order is the same. The problem in reading is thought to be one of learning to recognize the visual symbols with accuracy and reasonable speed. Buswell's thesis has more accuracy in describing reading at the earliest stages of development that it does for the reading behavior of more sophisticated scholars. Many of us for example have first discovered words in print long before we have heard them presented orally. Textbooks and published reports in the

academic disciplines are filled with specialized vocabulary that have not been previously encountered in oral form by the typical scholar. Carroll furthermore even suggests that an individual might learn to read a foreign language fluently without much acquaintance with its spoken form (3). Deaf children also learn to read without previously having heard language in its oral form. It may be that beginning readers rely on some sort of implicit speech to a greater degree than do more proficient or mature readers. At present it only seems safe to say that auding and reading are somehow related, yet the exact nature of the relationship is obscure. The relationships obviously grow out of the mediating processes generally associated with cognition.

Reading typically is regarded as a thought process. The relationship of reading to thought was noted by Thorndike (21) fifty years ago. Gray, (10) speaking for the yearbook committee of the National Society for the Study of Education, stressed the viewpoint that reading and thinking are inseparable as shown by the following quotation:

> "The Yearbook Committee believes that any conception of reading that fails to include reflection, critical evaluation, and the classification of meaning is inadequate. It recognizes that reading includes much that psychologists and educators have commonly called thinking."

Unfortunately for reading specialists many psychologists shunned research in thinking and cognition in the years that followed Watson's attacks on Wundt's introspection experiments. Even today many behaviorists avoid research in this area because such covert activities are not thought to be subject to adequate experimentation. Those interested in reading

found a greater affinity with psychologists of the Gestalt school who stressed perception and meaning. Unfortunately the experiments of the classical Gestaltists, although interesting, have yielded little of permanent value concerning the nature of cognition. On the other hand their experiments in perception have been of more value, yet do not answer many important questions concerning reading (19).

Perceptual learning is part of the skill of reading. Particularly significant in the acquisition of the directional scanning habit. Also necessary is letter differentiation and, as with learning the Morse code there is a second stage of perceptual learning in reading, where in the letter units now discriminable, are organized into higher-order units so that more is perceived at a glance (9).

During the last decade there has been a resurgence of interest in the psychology of cognition, perhaps because it is becoming more apparent that any psychology of human behavior must deal with this important human attribute. Unfortunately for the reading specialist there seems to be a number of different positions which are identifiable among those psychologists who work in the area of cognitive investigation. Ausubel, for example, identifies one group as neo-behaviorists as typified by Hebb, Osgood, Hull, Berlyne, and Staats, another group as cognitive theorists including Bruner, Ausubel and Gagne, group of developmentalists typified by Piaget and Vygotsky, and finally a group interested primarily in cognitive organization and functioning. A cogent review of these various positions can be found in Ausubel's introduction to a book of readings edited by Anderson and Ausubel (1).

Educators, of course, have been interested in cognition for many

years. Evidence of this interest is obvious from even a casual scanning of the current educational literature on curriculum materials in any academic discipline, ranging from reading and language arts to science and mathematics. The keen interest of educators sometimes has caused them to accept the theories and experimental findings of cognitive theorists prematurely. Currently there seems to be a rather prevalent belief among educators that mediational responses are primarily verbal in nature and that they can be taught by the careful exposure of pupils to various teaching procedures and materials. Unfortunately, the truth is that, although some teachers talk blithely about such words as concepts, concept attainment, concept formation, learning by inquiry or discovery; these terms usually represent merely hypothetical constructs or psychological inferences. Cognition theorists tend to be more reserved concerning the nature of these constructs and their function in mediation and learning. Alhtough the work of cognitive theorists hold promise, the extent to which these terms are misused, overgeneralized, and employed as new labels to describe old behaviors may cause eventual difficulty. Reading, for example, does not necessarily need new terms but rather needs operational statements which more adequately serve to define the behaviors we think we observe.

A number of experimental studies by researchers interested in cognition seem to hold promise for persons interested in reading. Kendler, Kendler and Learnard (15), for example, studied the mediating responses of children of various chronological ages. They found that children below age six tended to behave predominately on a single S-R basis and that with increasing chronological age an increasing proportion behavied in a mediating manner. The experimenters suggest that there is a relationship between learning and

choice behavior such that mediators learn more rapidly than did non-mediators. An analysis of the verbalizations of the children after they had completed the presented tasks suggest that there is a relationship between the ability to connect words with actions and the tendency toward mediated choices. This study seems to verify the emphasis placed by reading teachers on the relationship of language and reading, but moreover, indicates the need for further research to ascertain the nature of the factors which lead to cognitive differences among children at an early age.

A number of researchers have conceptualized cognitive functioning in terms of principles of control or cognitive styles (24) (25). Such control principles, styles, or strategies as leveling-sharpening, tolerance for unrealistic experience, focusing-scanning, equivalence range, constricted-flexible control, and field dependence-independence have been studied. Holzman and Klein (11) relate leveling and sharpening to modes of organizing stimuli. Leveling implies a low level of aritculation in a sequence of stimuli, while sharpening implies a high level of aritculation. Tolerance for unrelatistic experience has been described by Gardner (6) as acceptance of experiences that do not agree with what one knows to be true. Equivalence range relates to organizing ability as related to the awareness of differences. Focusing-scanning deals with the tendency to narrow awareness, to keep experiences discrete, and a tendency to separate affect from idea and thus to maintain objectivity. Field dependence-independence is employed to describe the ability to abstract an item from the field in which it appears or is embedded (6). In essence, the theory of cognitive principles implies that an individual develops certain characteristic modes of cognitive control as he

matures. These styles then are employed in coping with various situations which the organism faces. At present most of the research in this area seems to be focused upon the personality, yet the consistency with which these modes of control appear to be manifested in various individuals makes it reasonable to assume that the same controls may function in reading. The work of Kagan (13) (14) bears on this possibility.

Kagan postulates two stable dimensions upon which children and adults are distributed. The first is called reflection-implusivity and describes the degree to which a child reflects upon alternative classifications of a stimulus or alternative solution hypotheses in situations in which many responsepossibilities are available simultaneously. In such situations some children have a fast conceptual tempo; they impulsively report the first classification that occurs to them or carry out the first solution that appears appropriate. On the other hand reflective children or adults characteristically delay before carrying out a solution hypothesis or reporting a classification. They actively consider the alternatives available and compare their validity. The reflective individual behaves as if he cared that his first reponse is as close to correct as possible. A second dimension, called visual analysis, describes the child's tendency to analyze complex stimuli into their component parts. Some children fractionate a stimulus into small subunits, others label and react to a larger stimulus chunk. According to Kagan, analysis is relatively independent of the reflection-impulsivity dimension and each contributes vaiance to a variety of cognitive products. Kagan and his associates have conducted a number of interesting and thought provoking experiments to varify these hypotheses. Their findings appear to have important implications for reading specialists.

Reading teachers who have observed how some children will guess at unfamiliar words even though they have little likelihood of success while others appear reluctant to guess even though they probably know the word, should study the work of Kogan and Wallach. Kogan and Wallach have studied the process of decision making in individuals and the types of judgments and the manipulations of alternative solutions which lead toward judgments. Presumably some individuals constantly are more willing to take risks than are others (16).

If reading behavior involves thinking, and apparently it does, cognition and cognitive styles must play some part in the manner in which the reader comprehends and interprets what has been read. Cognitive styles, for example, imply various modes of conception, categorizing of ideas, and organizing significant facts and details. Reading is one mode by which "signs" and cues are inputted to some sort of a categorizing system by the organism. The nature of these categories is not known at present, but apparently the syllogistic or reflective patterns of reasoning long described by philosophers are not satisfactory descriptions of the process. It seems likely that in some types of reading, the individual already has many concepts and that reading is a simple tasks of recognition and association. In another type of reading, the individual has merely a limited number of concepts and is able to organize just a few related associations so that considerable effort is required to either retrieve concepts or search for relationships associated with the inputted cues. In a third case, the reader may have little or no familiarity with the information being processed and must rely mainly upon the information contained in the reading selection for processing. Obviously the latter type of reading is most

difficult and frustrating. Presumably cognitive styles and previously developed modes of control play a role in the degree of persistence the reader brings to the reading task.

Educators long have recognized maturational influences in the life cycle of the child. Significantly the previously mentioned research also recognized developmental patterns, perhaps of a type not generally observed by the classroom teacher. It has been said that:

> "Development is the complex product resulting from the cyclical actions that occur between physiological growth and learning. And because all development, whether it applies to one structure, one skill, a series of behaviors, or an entire personality, follows certain natural laws and consists of universal characteristics, it can best be defined as a rhythmic flow of qualitative changes proceeding in specific directions in a predicatable sequence." (7)

It is apparent, however, that we have considerable difficulty in identifying many of the important attributes and characteristics of the organism for systematic study. The traditionally employed concepts of intelligence, physical development, psychomotor abilities, personality and social-emotional adjustment represent extremely broad traits. Maturation and learning are difficult to measure and predict under the best conditions and do not take place in segmented, piecemeal fashion. Rather development and learning are continuous and constantly interrelated and integrated. In the United States the acquisition of reading behavior generally is regarded as taking place in some developmental fashion that is typically regarded as being akin to and correlated with the process of physical and intellectual development. Much has been made of the concepts of readiness and the appar-

ent relationship between the age of the child and the acquisition of various skills and their integration in subsequent stages. While the research of Piaget (17), Vygotsky (22), Gesell (8) and Ilg and Ames (12) has indicated that development proceeds in certain patterns, two other truths also are apparent. First, there are wide individual differences in developmental rates and, secondly, much significant development takes place prior to the age the child typically enters school. The typical research study which stresses correlations between reading achievement and other characteristics related to development have tended to ignore the lack of relationships and variance among triats and/or patterns of development. Such studies have emphasized uniformities commonalities and ignored differences.

Despite the difficulties of measuring stages of development, it seems safe to assume that the process of maturation, coupled with learning at each stage, is related to reading. As yet, just how the reading process is related is not clear. Typically one factor is the increasing capacity of the individual to acquire more complex abilities with age. Measurable differences in language, intellectual abilities, and formal social behavior obviously are other facets of the developmental cycles. Many areas of growth and development need some precise study. There seem to be certain "pre-reading" stages, other than those now employed to assess readiness, that should be considered by reading specialists. One example is the development of visual and auditory discrimination abilities related to letters, syllables, words. With skillful readers these abilities appear to be less important by the intermediate and upper elementary grades. At this stage somewhat different response modes and "sign" and language manipulation seem to be more important. In addition to the literal language needed during the pri-

mary grades, ability to handle figurative language and more complex structures seem to be necessary for reading success. The reasons why some children have less difficulty in acquiring these abilities is not so simple as many teachers think. It also should be noted that recently there has been a shift in emphasis from the biological concept of maturation to an emphasis on the effects that environment, particularly a stimulating and nurturing one, have on the course of development.

In summary, it has been suggested that, at present, a well formulated psychology of reading has not been developed. Reading specialists have tended to select various psychological positions to support certain of their own practies and beliefs. These are fragmentary and piecemeal. The major help that reading will gain from psychology, is the assistance that any science with a more rigorous methodology can offer to any non-science. The work of current psychologists working in fields which appear to have bearing on the reading process were discussed as examples.

References

1. Anderson, Richard C. & Ausubel, David P. Readings in the Psychology of Cognition. New York: Holt, Rinehart, & Winston, 1965.
2. Buswell, Guy T. "The Process of Reading." The Reading Teacher., 1959, 13, pp. 14-21.
3. Carroll, John B. "Wanted: A Research Basis for Educational Policy on Foreign Language Teaching." Harvard Education Review, 1960, 30, pp. 128-140.
4. Carroll, John B. Language and Thought. Englewood Cliffs: Prentice-Hall Inc., 1964.
5. Chomsky, Noam. "Review of Skinner's Verbal Behavior." Language, 1959, 35, pp. 26-58.
6. Gardner, R. W., Holzman, P. S., Klein, G. S., Linton, H. B., & Spence, D. P. "Cognitive Control: A Study of Individual Consistencies in Cognitive Behavior" in Psychological Issues (G. S. Klein, ed.) New York: International Universities Press, 1959.
7. Garrison, K. C., Kingston, A. J., & Bernard, H. W. The Psychology of Childhood. New York: Chas. E. Scribners & Sons, 1967.
8. Gesell, A. & Ilg, F. L. Child Development. New York, Harper & Row, 1949.
9. Gibson, Eleanor J. "Perceptual Learning." Annual Review of Psychology, 1963, 14, pp. 29-56.
10. Gray, William S. "The Nature and Types of Reading" in The Teaching of Reading: A Second Report. Thirty-sixth Yearbook of the National Society for the Study of Education, Pt. I, (Guy N. Whipple, ed). Bloomington: Public School Publishing Co., 1937, pp. 23-28.

11. Holzman, P. S. & Klein, G. S. "Motive and Style in Reality Contact." Bulletin of the Menninger Clinic, 1956, 20, pp. 181-191.

12. Ilg, F. L., & Ames, L. B. School Readiness. New York: Harper & Row, 1965.

13. Kagan, J., Moss, H. A., & Siegel, I. E. "Psychological Significance of Styles in the Basic Cognitive Processes in Children." Monographs of the Society for Research in Child Development, 1963, No. 28.

14. Kagan, J. "Developmental Studies in Reflection and Analysis" in Perceptual Development in Children, (A. H. Kidd & J. L. Rivoise, eds.). New York: International Universities Press, 1966, pp. 487-522.

15. Kendler, Tracy S., Kendler, H. H. & Leanard, Beulah. "Mediating Responses to Size and Brightness as a Function of Age." American Journal of Psychology, 1962, 75, pp. 571-586.

16. Kogan, N. & Wallach, M. A. Risk Taking: A Study in Cognition and Personality. New York: Holt, Rinehart & Winston.

17. Piaget, J. The Origins of Intelligence in Children. New York: International Universities Press, 1952.

18. Raygor, Alton E. Behavioral Research in Reading: What Does it Offer? Improvement of Reading Through Classroom Practice, Proceedings of Ninth Annual Association International Reading Association (J. Allen Figurel, Ed.), 1964, pp. 235-238.

19. Spache, George D. "The Perceptual Bases of Reading." Delivered at the World Congress in Reading, Paris, 1966.

20. Smith, Henry P. & Dechant, Emerald V. Psychology in Teaching Reading. Englewood Cliffs: Prentice-Hall, Inc., 1961.

21. Thorndike, Edward L. "The Understanding of Sentences: A Study of Errors in Reading." The Elementary School Journal, 1917, 18, pp. 98-114.

22. Vygotsky, L. S. Thought and Language. Cambridge: Massachusetts Institute of Technology Press, 1962.

23. Weaver, Wendell W. "On The Psychology of Reading" in New Concepts in College-Adult Reading (E. Thurston & L. E. Hafner, eds.) Thirteenth Yearbook of the National Reading Conference, 1964, pp. 67-74.

24. Witkin, H. A., Lewis, H. B., Hertzmann, M., Machoer, K., Meisner, P. B., & Wapman, S. Personality Through Perception. New York: Harper & Row, 1954.

25. Witkin, H. A., Dyk, R. B., Faterson, H. F., Goodenough, D. R., & Karp, S. A. Psychological Differentiation: Studies of Development. New York: John Wiley & Sons, 1962.